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**Middelberg**

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(54) **SELF-INFLATING TIRE WITH HYBRID PUMP**

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(57) **ABSTRACT**

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A self-inflating tire assembly includes a first and second air tube mounted within a tire wherein each air tube defines an air passageway. Each air tube is composed of a flexible material operative to allow an air tube segment opposite a tire footprint to flatten, closing the passageway, and resiliently unflatten into an original configuration. Each air tube is sequentially flattened by the tire footprint in a direction opposite to a tire direction of rotation to pump air along the passageway to an outlet device for direction into the tire cavity. Each air tube has an inlet end that are joined together by an inlet device. Each air tube has an outlet end that are joined together by an outlet device The inlet device is preferably positioned 180 degrees opposite the outlet device. The inlet device allows air to transfer from one air tube to the other air tube. The outlet device allows air to transfer from one air tube to the tire cavity.

(51) **Int. Cl.**  
**B60C 23/12** (2006.01)

(52) **U.S. Cl.**  
CPC ..... **B60C 23/12** (2013.01); **Y10T 152/10495** (2015.01)

(58) **Field of Classification Search**  
CPC ..... B60C 23/12; B60C 25/002  
See application file for complete search history.

**4 Claims, 8 Drawing Sheets**

